2017

Quick Drought Response Index: A SHORT-TERM DRYNESS INDICATOR

National Drought Mitigation Center
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Quick Drought Response Index

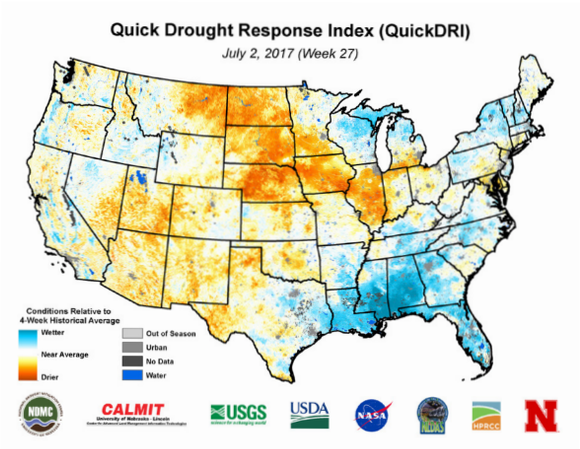
A SHORT-TERM DRYNESS INDICATOR

WHAT IS QUICKDRI?

The Quick Drought Response Index (QuickDRI) is a shorter-term indicator of dryness. It is calculated through the analysis of satellite- and model-based observations of conditions that influence drought.

QuickDRI is designed to provide a snapshot of anomalously dry or wet conditions over the past 4 weeks and serves as an indicator of emerging or rapidly changing drought conditions.

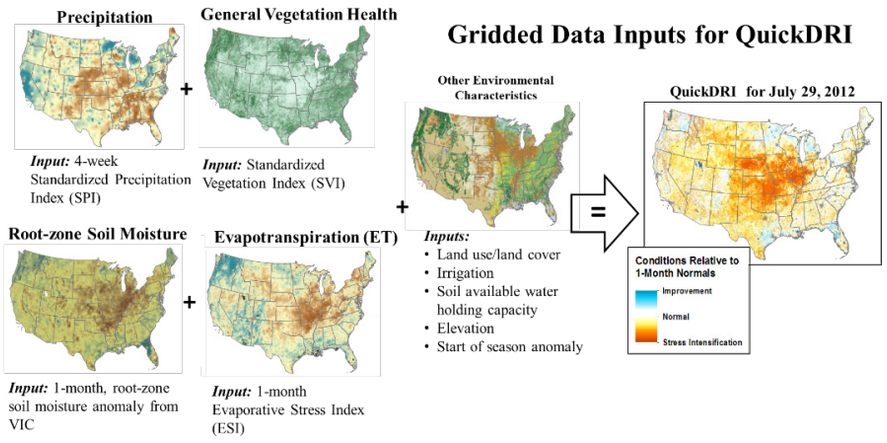
The maps are updated weekly over the continental United States and have a 1-kilometer spatial resolution.



WHY WAS IT DEVELOPED?

QuickDRI is designed to detect rapid-onset, "flash drought" events, which can have devastating economic impacts on the agricultural sector and can quickly change conditions during a drought. The index is an indicator of the landscape's short-term dryness status that combines several hydrologic and vegetation-related indicators commonly-used for drought monitoring. QuickDRI leverages the unique information provided by each of these indicators into a single index that characterizes how current conditions compare to historical average conditions on a continuous dryness scale spanning from drier to near average to wetter. The goal of QuickDRI is to serve as an alert for identifying areas of emerging and/or intensifying drought, as well as areas of improving drought conditions showing a wetter signal. Information on shorter-term dryness conditions can be used for a more timely early response to drought and the implementation of more effective drought mitigation actions.

WHAT INFORMATION IS USED IN QUICKDRI?



QuickDRI is a composite index that combines:

- Station-based precipitation;
- Soil moisture;
- Evapotranspiration;
- Vegetation health; and
- Environmental landscape characteristics, such as soils, land use, land cover, and elevation.

Regression tree-based QuickDRI models are developed from the historical analysis of these variables, and then are applied weekly to assess the current dryness conditions across the continental United States.

BACKGROUND IMAGE VIA PEXELS

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QUICKDRI PRODUCTS

A historical time series of weekly QuickDRI maps have been produced dating back to 2000. QuickDRI data, maps and value-added products are freely available to the general public on our website: *quickdri.unl.edu*

ON THE QUICKDRI SITE:

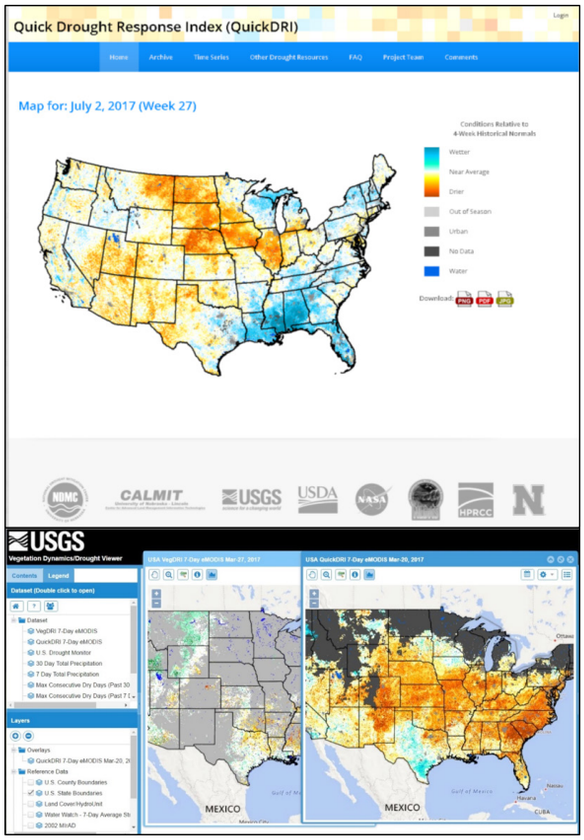
- Current national- and state-level maps, available in png, pdf, and jpg formats
- Archive of historical national and state maps
- Archive of historical 1-kilometer gridded QuickDRI data for continental United States
- Historical time-series and map animations
- Frequently Asked Questions
- Other drought monitoring tool resources to analyze in combination with the QuickDRI maps

THROUGH THE USGS DROUGHT VIEWER:

- Dynamic map viewer that includes:
  - Pan and zoom options of QuickDRI map
  - Overlays and comparison with other drought indicator and other map data
    - U.S. Drought Monitor
    - Vegetation Drought Response Index
    - Precipitation and dry day summaries
    - Land use/land cover
    - Political boundaries
- Access to near real-time and recent historical gridded QuickDRI data

APPLICATION EXAMPLES:

- Drought monitoring and early warning
- Crop and rangeland condition assessment
- Wildfire risk assessment



CONTACT US

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QUICKDRI PARTNERS

- Center for Advanced Land Management Information Technologies
- High Plains Regional Climate Center
- National Drought Mitigation Center
- U.S. Geological Survey Earth Resources Observation Science Center
- U.S. Department of Agriculture Agricultural Research Service
- National Aeronautics and Space Administration
- North American Land Data Assimilation System
- University of Nebraska-Lincoln

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